Physical Science Curriculum

Physical Science Units

1. Measuring Data in Science
    a. Metric Units
        i. Some sort of measurement lab where they have to see the difference between mass, volume, time, and distance (measuring their hand, a cup of water, etc…)
        ii. Paper Bridge (measure mass of bridge, length of bridge, mass held)
    b. Metric Conversions
        i. Imperial vs Metric System
        ii. Metric Conversions Lab
        iii. Metric Measurement Games
2. Collecting Data and Determining Variables
    a. Vernier Graphical Analysis Lab
    b. Wave Speed Lab
    c. Bottle Flip Lab
    d. Different concentrations of salts vs conductivity lab
    e. Which drink has the most electrolytes lab
    f. Which boat can hold the most pennies lab
    g. What is the percent of sugar in a potato lab
3. Motion Unit
    a. Distance vs Displacement
    b. Speed vs Velocity
    c. PT Graphs
    d. VT Graphs
    e. Acceleration Formulas
    f. Whiteboard Drop
    g. How high can you throw a tennis ball lab

4. Forces
    a. Free body diagrams
    b. What is a Newton lab
    c. Horizontal projectile lab
    d. Drop Zone Challenge
    e. Balloon Powered Car
5. Energy
    a. Human horsepower lab
    b. Energy of a bowling ball lab
    c. Water Rockets
    d. October Sky Movie
6. Mousetrap Car
7. Electricity
    a. Snap Circuits
    b. House Wiring
8. Waves
    a. Waves Gizmos
    b. Speed of sound lab
    c. Pendulum lab
    d. Reflection and refraction Gizmos (make sure to do the challenge of reflection)

9. Science Fair
    a. Question, variables (Independent and Dependent), constants
    b. Introduction…background research
    c. Collect Data…experiment
    d. Results (Data Table, Graphs) and Interpretation of Results
    e. Conclusion
    f. Abstract
    g. Presentation…science fair day
10. Problem Solving Labs (Fridays or whatever)
    a. Popsicle bridge
    b. *Straw Tower
    c. *Bath Disks
    d. *Build an electric motor
    e. Make your own slime
    f. Make your own ice cream
    g. *Density inquiry lab
    h. Paper ball challenge
    i. Catapult challenge
    j. *Lever challenge
    k. *Solar Oven and Smores
    l. Make the quietest house possible
    m. *Build the best water rocket

- [ ] Wave Lab
- [ ] Metric Measurement Games
- [ ] Paper Bridge
- [ ] Solar Oven
- [ ] Quantitative Analysis Lab
- [ ] Osmosis of a potato lab
- [ ] Distance and Displacement Activity
- [ ] Balloon powered car
- [ ] Mousetrap car
- [ ] Toothpick/popsicle bridge
- [ ] Straw tower or paper tower from Science Buddies
- [ ] How high can you throw a tennis ball (build up to this with lessons)
    - [ ] Distance vs Displacement
    - [ ] Speed vs Velocity
    - [ ] PT Graphs
    - [ ] VT Graphs
    - [ ] Acceleration Formulas
    - [ ] Whiteboard Drop
- [ ] Bath Bombs
- [ ] Build a small electric motor
- [ ] Bottle flip experiment
- [ ] Which drink has the most electrolytes
- [ ] Make your own ice cream
- [ ] Make slime
- [ ] Different salts and conductivity (or different salt concentrations)
- [ ] What is a Newton Lab
- [ ] Horizontal Projectile Lab
- [ ] Drop Zone Challenge
- [ ] Human Horsepower
- [ ] Energy of a bowling ball lab (I have an idea)
- [ ] October Sky Movie
- [ ] Make a box with different insulating materials to deaden sound
- [ ] Electric house
- [ ] Waves Gizmos (might have to retype it so it is even easier and to the point)
- [ ] Speed of sound
- [ ] Pendulum Lab (make the perfect clock)
- [ ] Reflection/Refraction
- [ ] Water Rocket (gotta build that rocket launcher)
- [ ] Science Fair
    - [ ] Question
    - [ ] Variables (Independent and Dependent), Constants
    - [ ] Introduction
    - [ ] Collect Data
    - [ ] Results (Data Table, Graphs) and Interpretation of Results

- [ ] Conclusion
- [ ] Abstract

- [ ] Snap Circuits (can we get more sets…they liked this more than we thought)
- [ ] Density Inquiry Lab
- [ ] Build a boat and predict the exact number of pennies it would take to sink it.
- [ ] Paper Ball Challenge (How to increase the time it takes a ball to fall to the ground)
- [ ] Catapult Challenge
- [ ] Lever Challenge
- [ ] Chemistry Stuff (if you want to add this unit into the curriculum)